

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claim 1 (Currently Amended): A system for a server to determine a plurality of lattice points to be referenced to prepare correspondence defining data that defines correspondence between ~~the~~ an amount of ink for each color used by a printing apparatus connected to a client and ~~the~~ a value of a color component in a specific color system, in which:

said client has a unit to record ~~the~~ original correspondence defining data which previously prescribes correspondence between the lattice points in ~~the~~ a low-dimensional color space prescribed by less color components than ~~the~~ a number of inks for each color and the lattice points for an ink amount in ~~the~~ an ink amount space, a client's communication unit to transmit and receive data through a two-way communication line, and a unit to transmit the original correspondence defining data to the server through the client's communication unit; and

said server has a server's communication unit to transmit and receive data through a two-way communication line, a unit to receive the original correspondence defining data through the server's communication unit, a unit to acquire correspondence between lattice points in the low-dimensional color space and lattice points in ~~the~~ a device-independent color space by referencing the original correspondence defining data, a unit to prescribe a smoothness evaluation function which evaluates smoothness of ~~the~~ an arrangement of lattice points in the device-independent color space and has as a variable ~~the~~ information about ~~the~~ a position of lattice points in the low-dimensional color space, the smoothness evaluation function having a minimum value when a first distance between a lattice point to be optimized and an adjacent lattice point in a first direction is equal to a second distance between the lattice point to be optimized and an adjacent lattice point in a second direction that is opposite to the first direction, and the smoothness evaluation function increasing in value as a difference between the first distance and the second distance increases, a unit to optimize the arrangement of lattice points in the device-independent color-space by improving ~~the~~ a rating of the smoothness evaluation function, with the information about the position of lattice points varied, and a unit to determine lattice points for the correspondence defining data by associating the amount of ink for each color corresponding to lattice points in the low-dimensional color space specified by the information about the position of lattice points in ~~the~~ an optimized state with lattice points in the low-dimensional color space prescribed by the original correspondence defining data.

Claim 2 (Currently Amended): The system of Claim 1 for determining lattice points for the correspondence defining data, in which said server has a unit to transmit data indicating lattice points for the correspondence defining data through the server's communication unit, and said client has a unit to receive data indicating lattice points for the correspondence defining data through the client's communication unit, and a unit to prepare the correspondence defining data that associates the amount of ink with the value of the color component in the specific color system by means of colorimetric values obtained by examining with a prescribed colorimeter ~~the~~ an output of printing with an ink amount prescribed by the received data of lattice points for the correspondence defining data.

Claim 3 (Currently Amended): The system of Claim 1 for determining lattice points for the correspondence defining data, in which said server has a unit to prepare the correspondence defining data that associates the amount of ink with the value of the color component in the specific color system by means of colorimetric values obtained by examining with a prescribed colorimeter ~~the~~ an output of printing with an ink amount prescribed by data indicating lattice points for the correspondence defining data, and a unit to transmit the prepared correspondence defining data through the server's communication unit, and said client has a unit to receive the correspondence defining data through the client's communication unit.

Claim 4 (Canceled).

Claim 5 (Currently Amended): A server that determines a plurality of lattice points to be referenced to prepare correspondence defining data that defines correspondence between ~~the~~ an amount of ink for each color used by a printing apparatus and ~~the~~ a value of a color component in a specific color system, said server comprising:

- a server's communication unit to transmit and receive data through a two-way communication line,

- a unit to receive through the server's communication unit ~~the~~ original correspondence defining data which previously prescribes correspondence between the lattice points in ~~the~~ a low-dimensional color space prescribed by less color components than ~~the~~ a number of inks for each color and the lattice points for an ink amount in ~~the~~ an ink amount space,

- a unit to acquire correspondence between lattice points in the low-dimensional color

space and lattice points in ~~the~~ a device-independent color space by referencing the original correspondence defining data,

a unit to prescribe a smoothness evaluation function which evaluates smoothness of ~~the~~ an arrangement of lattice points in the device-independent color space and has as a variable ~~the~~ information about ~~the~~ a position of lattice points in the low-dimensional color space, the smoothness evaluation function having a minimum value when a first distance between a lattice point to be optimized and an adjacent lattice point in a first direction is equal to a second distance between the lattice point to be optimized and an adjacent lattice point in a second direction that is opposite to the first direction, and the smoothness evaluation function increasing in value as a difference between the first distance and the second distance increases.

a unit to optimize the arrangement of lattice points in the device-independent color-space by improving ~~the~~ a rating of the smoothness evaluation function, with the information about the position of lattice points varied, and

a unit to determine lattice points for the correspondence defining data by associating the amount of ink for each color corresponding to lattice points in the low-dimensional color space specified by the information about the position of lattice points in ~~the~~ an optimized state with lattice points in the low-dimensional color space prescribed by the original correspondence defining data.

Claim 6 (Currently Amended): A method for determining in a server a plurality of lattice points to be referenced to prepare correspondence defining data that defines correspondence between ~~the~~ an amount of ink for each color used by a printing apparatus connected to a client and ~~the~~ a value of a color component in a specific color system, in which:

said client records in a prescribed recording medium ~~the~~ original correspondence defining data which previously prescribes correspondence between the lattice points in ~~the~~ a low-dimensional color space prescribed by less color components than ~~the~~ a number of inks for each color and the lattice points for an ink amount in ~~the~~ an ink amount space and sends ~~it~~ the original correspondence defining data to the server through a two-way communication line, and

said server receives the original correspondence defining data, acquires correspondence between lattice points in the low-dimensional color space and lattice points in ~~the~~ a device-independent color space by referencing the original correspondence defining

data, prescribes a smoothness evaluation function which evaluates smoothness of ~~the~~ an arrangement of lattice points in the device-independent color space and has as a variable ~~the~~ information about ~~the~~ a position of lattice points in the low-dimensional color space, the smoothness evaluation function having a minimum value when a first distance between a lattice point to be optimized and an adjacent lattice point in a first direction is equal to a second distance between the lattice point to be optimized and an adjacent lattice point in a second direction that is opposite to the first direction, and the smoothness evaluation function increasing in value as a difference between the first distance and the second distance increases, optimizes the arrangement of lattice points in the device-independent color-space by improving ~~the~~ a rating of the smoothness evaluation function, with the information about the position of lattice points varied, and determines lattice points for the correspondence defining data by associating the amount of ink for each color corresponding to lattice points in the low-dimensional color space specified by the information about the position of lattice points in ~~the~~ an optimized state with lattice points in the low-dimensional color space prescribed by the original correspondence defining data.

Claim 7 (Canceled).

Claim 8 (Currently Amended): A method for determining a plurality of lattice points to be referenced to prepare correspondence defining data that defines correspondence between ~~the~~ an amount of ink for each color used by a printing apparatus and ~~the~~ a value of a color component in a specific color system, said method comprising:

acquiring through a two-way communication line ~~the~~ original correspondence defining data which previously prescribes correspondence between the lattice points in ~~the~~ a low-dimensional color space prescribed by less color components than ~~the~~ a number of inks for each color and the lattice points for an ink amount in ~~the~~ an ink amount space,

acquiring correspondence between the lattice points in the low-dimensional color space and the lattice points in ~~the~~ a device-independent color space by referencing the original correspondence defining data,

prescribing ~~prescribes~~ a smoothness evaluation function which evaluates smoothness of ~~the~~ an arrangement of lattice points in the device-independent color space and has as a variable ~~the~~ information about ~~the~~ a position of lattice points in the low-dimensional color space, the smoothness evaluation function having a minimum value when a first distance

between a lattice point to be optimized and an adjacent lattice point in a first direction is equal to a second distance between the lattice point to be optimized and an adjacent lattice point in a second direction that is opposite to the first direction, and the smoothness evaluation function increasing in value as a difference between the first distance and the second distance increases.

optimizing the arrangement of lattice points in the device-independent color-space by improving ~~the~~ a rating of the smoothness evaluation function, with the information about the position of lattice points varied, and

determining lattice points for the correspondence defining data by associating the amount of ink for each color corresponding to lattice points in the low-dimensional color space specified by the information about the position of lattice points in ~~the~~ an optimized state with lattice points in the low-dimensional color space prescribed by the original correspondence defining data.

Claim 9 (Currently Amended): A computer-readable storage medium having a program product for a server stored thereon, the program including computer-executable instructions for causing the server to determine a plurality of lattice points to be referenced to prepare correspondence defining data that defines correspondence between ~~the~~ an amount of ink for each color used by a printing apparatus connected to a client and ~~the~~ a value of a color component in a specific color system, said program product permitting said client to ~~realize~~ implement a feature function to record ~~the~~ original correspondence defining data which previously prescribes correspondence between the lattice points in ~~the~~ a low-dimensional color space prescribed by less color components than ~~the~~ a number of inks for each color and the lattice points for an ink amount in ~~the~~ an ink amount space, and

a client's communication ~~feature function~~ to transmit and receive data through a two-way communication line, and a ~~feature function~~ to transmit the original correspondence defining data to the server through the client's communication ~~feature function~~; and

said program product permitting said server to ~~realize~~ implement a server's communication ~~feature function~~ to transmit and receive data through a two-way communication line, a ~~feature function~~ to receive the original correspondence defining data through the server's communication ~~feature function~~, a ~~feature function~~ to acquire correspondence between lattice points in the low-dimensional color space and lattice points in ~~the~~ a device-independent color space by referencing the original correspondence defining

data, a ~~feature~~ function to prescribe a smoothness evaluation function which evaluates smoothness of ~~the~~ an arrangement of lattice points in the device-independent color space and has as a variable ~~the~~ information about ~~the~~ a position of lattice points in the low-dimensional color space, the smoothness evaluation function having a minimum value when a first distance between a lattice point to be optimized and an adjacent lattice point in a first direction is equal to a second distance between the lattice point to be optimized and an adjacent lattice point in a second direction that is opposite to the first direction, and the smoothness evaluation function increasing in value as a difference between the first distance and the second distance increases,

a ~~feature~~ function to optimize the arrangement of lattice points in the device-independent color-space by improving ~~the~~ a rating of the smoothness evaluation function, with the information about the position of lattice points varied, and

a ~~feature~~ function to determine lattice points for the correspondence defining data by associating the amount of ink for each color corresponding to lattice points in the low-dimensional color space specified by the information about the position of lattice points in ~~the~~ an optimized state with lattice points in the low-dimensional color space prescribed by the original correspondence defining data.

Claim 10 (Canceled).

Claim 11 (Currently Amended): A computer-readable storage medium having stored thereon a program ~~product~~ for determining a plurality of lattice points to be referenced to prepare correspondence defining data that defines correspondence between ~~the~~ an amount of ink for each color used by a printing apparatus and ~~the~~ a value of a color component in a specific color system, said program ~~product~~ permitting a server computer to ~~realize~~ implement:

a server's communication ~~feature~~ function to transmit and receive data through a two-way communication line,

a ~~feature~~ function to receive through the server's communication feature ~~the~~ original correspondence defining data which previously prescribes correspondence between the lattice points in ~~the~~ a low-dimensional color space prescribed by less color components than ~~the~~ a number of inks for each color and the lattice points for an ink amount in ~~the~~ an ink amount space,

a ~~feature~~ function to acquire correspondence between lattice points in the low-dimensional color space and lattice points in ~~the~~ a device-independent color space by referencing the original correspondence defining data,

a ~~feature~~ function to prescribe a smoothness evaluation function which evaluates smoothness of ~~the~~ an arrangement of lattice points in the device-independent color space and has as a variable ~~the~~ information about ~~the~~ a position of lattice points in the low-dimensional color space, the smoothness evaluation function having a minimum value when a first distance between a lattice point to be optimized and an adjacent lattice point in a first direction is equal to a second distance between the lattice point to be optimized and an adjacent lattice point in a second direction that is opposite to the first direction, and the smoothness evaluation function increasing in value as a difference between the first distance and the second distance increases,

a ~~feature~~ function to optimize the arrangement of lattice points in the device-independent color-space by improving ~~the~~ a rating of the smoothness evaluation function, with the information about the position of lattice points varied, and

a ~~feature~~ function to determine lattice points for the correspondence defining data by associating the amount of ink for each color corresponding to lattice points in the low-dimensional color space specified by the information about the position of lattice points in ~~the~~ an optimized state with lattice points in the low-dimensional color space prescribed by the original correspondence defining data.